

REMARKS

Original claims 7-47 were rejected in the parent application 09/793,646 under 35 U.S.C 102 and 103 over Isao et al. (US 5,952,128) alone or in combination with other references. Isao et al. teaches away from amended claims 7-47 which recite "said surface layer comprises a higher concentration of oxygen than that part of said phase shifting layer not including said surface layer". Isao et al. teaches a surface layer having the same or a lower concentration of oxygen than the phase shifting layer not including the surface layer. Isao at col. 2, lines 45-47, teaches a bulk layer of first layer formed using 2.65-6.47% by volume nitric monoxide and at col. 2, lines 55-56, a surface layer formed by using 0.59-6.47% nitric monoxide (NO). Thus, the surface layer of Isao et al. does not have a high concentration of oxygen than the bulk layer as claimed by Applicants.

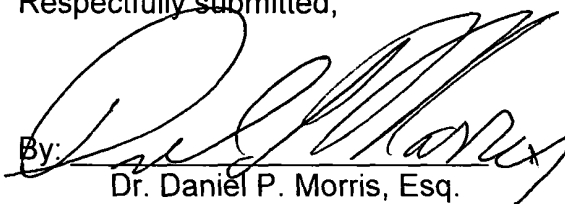
Isao teaches reducing the oxygen content at the surface of the material to reduce the sensitivity of the surface to attack by chemical agents. See col. 2, lines 13-27 and col. 3, lines 29-36. Table 1 of Isao shows film conditions for film M-1 to M-24 each of which is made using a constant NO concentration which therefore results in a layer having uniform oxygen concentration, that is, not one with a higher oxygen concentration at the surface than in the portion of the layer below the surface as claimed by Applicants. Isao Table 2 gives properties of the films. Table 3 gives two layer examples. Table 3 of Isao shows 5 Examples M1-1, M2-1, M3-2, M2-3 and M2-4.

In Table 3, the second layer is the surface layer. (See col. 9, lines 1-7). The first Example M1-1 is a single layer. (See col. 9, lines 28-30). Thus in M1-1, the oxygen content is uniform and the surface is not richer in oxygen than the bulk as claimed by Applicants.

In each of the other Examples M2-1, M2-2, M2-3 and M2-4, the second layer is formed from a gas with a low or nitric oxide concentration than used to form the first layer as seen from Table 1. Thus, these multilayer examples teach a surface layer having lower oxygen content than the bottom layer which is directly contrary to Applicants' claims. Therefore, Isao et al. teaches away from Applicants' invention.

The benefit for having high oxygen concentration on the surface is taught throughout applicants' specification. Briefly, for example (this example is illustrative and not limiting) the laser irradiation causes an increase of optical transmission of the film as described at page 10, in the paragraph beginning with "Figure 6 summarizes the change of %T at 193 nm as a function of Ar-F laser at 193 nm...". This was attributed to the laser induced surface layer oxidation (Increase of O concentration on surface) as shown at page 10, in the paragraph beginning with "Fig 5(a) is an XPS analysis ...". Thus, by pre-treating the sample with a proper annealing condition, we pre-oxidize (increase the surface O concentration) before the laser irradiation so that when we do the laser irradiation, the increase of optical transmission is not as severe as compared to no pretreatment (annealing conditions are described in page 11, line 2 to line 19).

Respectfully submitted,

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